

172 034
TITLE--DIFFUSION METAL PLATING -U- UNCLASSIFIED
PROCESSING DATE--27NOV70
AUTHOR--TITOV, V.K.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (2), 242-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--PHYSICAL DIFFUSION, HYDROGEN, SOLID SOLUTION, HALIDE,
THERMODYNAMICS, METAL COATING, METAL PLATING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/1450
STEP NO--UR/0370/70/000/002/0242/0246
CIRC ACCESSION NO--AP0130383
UNCLASSIFIED

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CIRC ACCESSION NO--AP0130383

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF DIFFUSION COATINGS ON METALS FROM THE GAS PHASE CONTG. H HALIDES CAN OCCUR BY ANY OF SEVERAL DIFFERENT REACTIONS. THE CASE OF SATN. OF THE SURFACE OF METAL M SUBALPHA WITH METAL M SUBE, WITH THE FORMATION OF A SOLID SOLN. DURING SIMULTANEOUS PROCEEDING OF THE EXCHANGE AND THE H REDN. REACTIONS IS EXAMD. THE EXCHANGE FACTOR, ALPHA, DEPENDS ON CONC., N SUB1, OF THE METAL SATURATOR M SUBE IN THE SOLID SOLN. WITH THE SATURABLE METAL M SUBALPHA, THE THERMODYNAMIC ACTIVITY OF M SUBE AND M SUBALPHA, AND THE CONSTS. OF THE EQUIL. EXCHANGE AND HYDROGEN REDN. REACTIONS. ALSO, WITH INCREASING N SUB1, THE ALPHA DECREASES AT POS. DEVIATIONS FROM RAULT'S LAW, AND, VICE VERSA, IT INCREASES AT NEG. DEVIATIONS. THE 3 POSSIBLE CASES OF THE DEPENDENCE OF ALPHA ON N SUB1 DURING THE FORMATION OF IDEAL SOLNS. ARE DISCUSSED. THE EFFECT OF THE H SUB2 CONTENT IN THE STARTING GAS MIXT. ON ALPHA DEPENDS ON THE RELATIVE MAGNITUDE OF THE ISOBARIC POTENTIAL OF THE INTERACTION REACTION BETWEEN M SUB3 AND M SUBSLPHA AND THE H HALIDE. CONSEQUENTLY, IF K SUB1 LARGER THAN K SUB2, THEN ALPHA INCREASES WITH INCREASED INITIAL H CONC., AND IT DECREASES IF K SUB1 SMALLER THAN K SUB2. WITH INCREASING K SUB1 AND CONST. K SUB2 THE ALPHA INCREASES. IF, HOWEVER, K SUB2 INCREASES AND K SUB1 REMAINS CONST., THEN ALPHA DECREASES. EXPTL. DATA CORRESPOND TO THE LAWS DERIVED IN THIS WORK.

UNCLASSIFIED

USSR

UDC: 534.222.2

SIL'VESTROV, V. V., TITOV, V. M., URUSHKIN, V. P.

"Study of Gas Flow upon Dynamic Loading of Liquid Nitrogen and Hydrogen"

Dinamika Splosh. Sredy [Continuous Medium Dynamics -- Collection of Works], No 10, Novosibirsk, 1972, pp 233-238 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12B202, by O. K. Rozanov)

Translation: The peculiarities of the flow of liquid nitrogen and hydrogen resulting from the action of dynamic loading of high intensity on the liquids are studied experimentally. Two methods of loading of deliquified gasses are used: planar loading of a layer by the impact of a plate accelerated to high velocity by detonation products, and cylindrical compression of an ampule containing the cryogenic liquid. The experimental installations are described in detail. The nature of flow of the liquids, differing significantly in molecular weight, compressibility and density, was analyzed in glass pipes 10-12 mm in diameter attached to the unloaded side of the liquid through a thin diaphragm. The air pressure in the pipe was 0.5-1 mm hg. In the case of hydrogen, a pipe of stainless steel 100 mm long was connected to the diaphragm, followed by the glass pipe. The waves propagating in the pipes were recorded by a streak camera.

With planar loading, it was found that the maximum shock wave velocities in

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Sil'vestrov, V. V., Titov, V. M., Urushkin, V. P., *Dinamika Splosh. Sredy*, No 10, Novosibirsk, 1972, pp 233-238.

the pipe occur for nitrogen when the working chamber, with a volume of $2-3 \text{ cm}^3$, was shaped like a truncated cone with a peak angle of 90° . It is demonstrated that the influence of rear loading on velocity is slight, while variation of the cone angle has a significant influence on flow velocity, which is related to the effect of reflection from the side walls of the cone. It is noted that the exhaust velocity remains practically unchanged over the first 300 mm from the diaphragm. With planar loading of the hydrogen layer, the velocity in the initial sector reaches 35 km/sec, at a distance of 1 m it drops to 23 km/sec. The flow arising in this case is characteristically unstable. Cylindrical compression of the ampule of nitrogen formed a Mach configuration. In the case of hydrogen, pulsed x-ray studies showed complete closure of the ampule. It is emphasized that cylindrical loading produces no increase in flow velocity over flat loading for 150-300 mm. Six biblio. refs.

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USSR

UDC:662.215.25

TITOV, V. M., SHVETSOV, G. A., Novosibirsk

"Laboratory Explosive Methods of High-Speed Projection of Solids"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 401-404

Abstract: Formulas are presented to allow the calculation of the minimum explosive charge and proper tube geometry in the design of an explosive device for high-speed projection of solids (spheres) at maximum speed without rupture of the spheres or of the tube from which they are fired.

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UDC: 538.4

PRYAKHIN, G. V. TITOV, V. M. SHVETSOV, G. A.

"Use of Cumulative Explosive Charges in MHD Pulse Generators"

V sb. Dinamika sploshn. sredy. Vyp. 3 (Dynamics of a Continuous Medium--collection of works. No 3), Novosibirsk, 1969, pp 111-114 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9B47)

Translation: The authors investigate the possibility of using gas-cumulative explosive charges in MHD generators, where the charges create a jet of detonation products 10-15 times as long as the discharge channel is wide. An induced voltage of 50 V/cm was produced with a jet velocity of 10^6 cm/s and a magnetic field of 0.5 T. The resistance of the cumulative jet was measured by the electrode method. For a cylindrical charge with an aluminum casing having an inner channel wall thickness of 0.15 mm, an electrical conductance of about 100 mhos/cm was obtained. A power of 1.2 MW was obtained with a 1 sq. cm channel cross section. Magnetic pulse fields of up to 10 T were also used. Bibliography of four titles. Yu. N. Denisov.

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CSO: 1861-W

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UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--THE SURGICAL TREATMENT OF DIFFUSE TOXIC GOITER -U-

AUTHOR--(02)-NIKOLAYEV, O.V., TITOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 121-127

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GOITER, SURGERY, IODINE, ADRENAL CORTEX, THYROID GLAND,
PEDIATRICS, ANESTHESIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1216

STEP NO--UR/0531/70/000/004/0121/0127

CIRC ACCESSION NO--AP0054111

UNCLASSIFIED

2/2 028

CIRC ACCESSION NO--AP0054111

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DEPICTS THE RESULTS OF SURGICAL TREATMENT OF 629 PATIENTS WITH DIFFUSE TOXIC GOITER PREDOMINANTLY OF MODERATE AND SEVERE FORM. PREOPERATIVE PREPARATION CONSISTED IN A COMPLEX OF THERAPEUTIC AND TONIC MEASURES. AS ANTITHYROID AGENTS OVER 95 PER CENT OF PATIENTS RECEIVED MICRODOSES OF IODINE, DIIODOTHYROSINE AND PREPARATIONS OF THE ADRENAL CORTEX. THYROIDSTATIC AGENTS WERE EMPLOYED IN LESS THAN 5 PER CENT OF CASES. SUBTOTAL RESECTION OF THE THYROID GLAND WITHOUT LIGATION OF VESSELS WAS CARRIED OUT UNDER ENDOTRACHEAL ANESTHESIA AFTER A. V. VISHNEVSKY AND IN CHILDREN SOMETIMES UNDER ENDOTRACHEAL ANESTHESIA. RATIONAL PREOPERATIVE PREPARATION OF PATIENTS WITH TOXIC GOITER IS A RELIABLE MEANS OF PROPHYLAXIS OF POSTOPERATIVE COMPLICATIONS, PREVENTS THYROTOXIC CRISES (WITHOUT PREPARATION WITH MERCASOLYL OR ANALOGOUS ANTITHYROID AGENTS WHICH, AS A RULE, DETERIORATE THE CONDITIONS OF OPERATIVE INTERVENTION). A LETHAL OUTCOME AFTER THE OPERATION IN A 6 YEAR OLD GIRL WITH SEVERE THYROTOXICOSIS AND HYPOCORTICISM WAS DUE TO THE LATE EFFECT OF REANIMATION IN AN INCORRECT CHOICE OF THE METHOD OF ANESTHESIA. THIS COMPRISES 0.1 PER CENT TO THE TOTAL NUMBER OF OPERATIONS FOR DIFFUSE TOXIC GOITER (930) PERFORMED DURING 1962 TO 1966.

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USSR

TITOV, V. P.

UDC: 621.391.2

"A Method of Determining the Statistical Characteristics of Search Time"
Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 1068-1071

Abstract: A method is described for determining the moments of probability distribution of search time. The procedure is based on representing the search time in the form of a sum of a random number of random quantities with the use of generating functions. The working range of the possible values of the parameter to be evaluated is broken down into elementary cells, one of which contains the signal. It is assumed that there is a total of m_0 elementary cells. The elementary cells are examined in sequence in accordance with the accepted search algorithm. If there is no signal in a given elementary cell, search continues. If there is a signal in the cell, search is terminated. Erroneous decisions may result from noises. There is a false stop if it is decided that there is a signal where in fact there is none. It is assumed that in this case, the system detects its own error in a given time sufficient to guarantee the predetermined reliability. If it is decided that there is no signal in a cell which in fact contains a signal, the system begins a new search cycle. It is assumed that the probability of a false stop α and false signal skip β

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TITOV, V. P., Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 1068-1071

remain constant during search, and that the results of analysis of individual cells are independent. It is found that the mean duration of a regular search is less than the mean duration of a random search by a factor of $2/(1 + \beta)$. It was also found that the time variance of a regular search is less than for a random search. In fact, the second term in the expression for time variance for a regular search is less than for a random search by a factor of $2/(1 + \beta)$ and the first term for large m_0 is less by a factor of $\frac{1}{\beta \cdot \frac{(1-\beta)^2}{12}}$ than for random search. The difference between them decreases with an increase in the probability of skip.

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TITOV, V. V.

UDC: 51

"Optimal Tekhpromfinplan (Technical Industry Financial Plan) for an Industrial Enterprise"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works, Institute of Mathematics, Siberian Division, Academy of Sciences, USSR) No 7(24), 1972, pp 112-123 (from RZh--Matematika, No 7, 1973, Abstract No TV577)

Translation: An optimal plan for realizing technical organization measures, which may be found through a proposed economic-mathematical model, increases production efficiency. Problems in the construction of such a model and realization of the computations on an electronic computer are considered. Author's abstract.

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TITOV, V. V.

UDC: 51

"Some Models for Optimizing the Production Program of an Industrial Enterprise"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works, Institute of Mathematics, Siberian Division, Academy of Sciences, USSR) No 7(24), 1972, pp 105-111 (from RZh--Matematika, No 7, 1973, Abstract No 7V570)

Translation: Models are considered for forming the production program of an industrial enterprise, with completion of the production (in specified intervals) of individual groups of products taken into account; the models distribute the program over the planned periods with uniform, simultaneous fulfillment of many technico-economic indices taken into account. Author's abstract.

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USSR

UDC: 51

MAKAROV, V. L., TITOV, V. V., and SHEYKHETOV, B. M.

"A Model for Designing the Production Program for an Industrial Enterprise"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works, Institute of Mathematics, Siberian Division, Academy of Sciences, USSR) No 7(24), 1972, pp 61-70
(from RZh--Matematika, No 7, 1973, Abstract No 7V569)

Translation: In this model for designing the production program of an industrial enterprise, one of the steps in the operation model for the enterprise, the existing practice of computing the production problem is formalized. Authors' abstract.

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USSR

TITOV, V. V.

UDC: 51

"Optimization of Operational-Chronological Planning of Large-Scale Production"

Sb. Tr. In-t mat. Sib. otd. AN SSSR (Collection of Works, Institute of Mathematics, Siberian Division, Academy of Sciences, USSR) No 7(24), 1972, pp 124-130 (from RZh--Matematika, No 7, 1973, Abstract No 7V571)

Translation: The problem of operational-chronological planning in large-scale production is reduced (in one variant) to a transport problem in linear programming. The graph for machine loading is set up for each major group. Author's abstract.

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TITOV, V. V.

UDC: 51

"Optimum Layout and Inventory Control of Industrial Materials"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works. Institute of Mathematics of the Siberian Department, Academy of Sciences of the USSR), 1972, vyp. 7(24), pp 131-135 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V487 by the author)

Translation: In the examined problem account is taken of the economic effect realized from optimum layout of materials and change in the level of incomplete production. The problem is reduced to a two-component problem in linear programming.

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UNCLASSIFIED
TITLE--PROPERTIES AND USE OF AN ALUMINUM POWDER DEGASSED IN AN INERT
ATMOSPHERE -U-
AUTHOR-(05)-LITVINTSEV, A.I., TSABROV, N.D., VINOKUROV, N.D., TITOV, V.V.,
BORZUNOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--TSVET, METAL. 1970, 43(2), 62-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ALUMINUM POWDER, POWDER METAL PRODUCTION, POWDER METAL
PROPERTY, METAL DEGASSING, INERT GAS, INDUSTRIAL FURNACE, HOT ROLLING,
COLD ROLLING, DUCTILITY, HEAT RESISTANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1919
CIRC ACCESSION NO--AP0108248
STEP NO--UR/0136/70/043/002/0062/0064
UNCLASSIFIED

2/2 044

CIRC ACCESSION NO--AP0108248
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT. THE HIGH TEMP. DEGASSING OF LARGE VOLS. OF AL POWDERS ON INDUSTRIAL SETUP WAS TESTED. UP TO 1600 KG OF AL POWDER WAS PURED INTO THE USEFUL VOL. OF THIS SETUP, WHICH WAS THEN PLACED INTO A COLD FURNACE, WHEREUPON AN AR ATM. WAS INTRODUCED. THE TEMP. WAS MEASURED AT THE UPPER, MIDDLE, AND LOWER PORTIONS OF THE DEGASSING CONTAINER. A 4TH THERMOCOUPLE WAS PLACED INSIDE THE CONTAINER. THE TEMP. DROP BETWEEN THE UPPER AND THE LOWER ZONES WAS SIMILAR TO 50DEGREES. THE RESULTS OF THE GAS ANAL. INDICATE THAT THE GAS CONTENT OF THE AL POWDER IS DETD. BY THE TOTAL CONTENT OF THE FRAGMENTS OF THE HYDROXY BOUNDARIES IN CONGLOMERATES OF CLUMPED PARTICLES. THE EFFECTIVENESS OF THE DEGASSING WAS THEN STUDIED IN ORDER TO BE ABLE TO EMPLOY THE POWDER IN THE PRODUCTION OF SEMIFINISHED PRODUCTS. BASED ON THE RESULTS OF THE MECH. PROPERTIES MEASUREMENTS IT CAN BE SEEN THAT HOT ROLLED STRIPS ACQUIRE INCREASED PLASTICITY, WHEREAS THE COLD ROLLED STRIPS ARE STABLE RELATIVE TO THE STRENGTH, PLASTICITY, AND HEAT RESISTANCE.

UNCLASSIFIED

USSR

UDC 539.216.2.001.5

GUSEV, V. M., GUSEVA, M. I., KURINYY, V. I., TITOV, V. V., TSYPLENKOV, V. S.,
BARANOVA, Ye. K., STREL'TSOV, L. N.

"Investigation of the Properties of an Oxide Film Obtained by Atomic Oxygen
Ion Bombardment of Silicon and Use of Such a Film for Protecting a PN
Junction"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1462-1467

Abstract: The paper presents the results of a study of the thickness of oxide films as a function of the conditions of silicon bombardment by atomic oxygen ions, as well as the composition and dielectric properties of the films and the space charge in them. The protective properties of oxide on structures with ion-injected PN junctions are studied. Most of the experiments were done on N-type and P-type silicon with resistivity of 7-10 $\Omega \cdot \text{cm}$. The specimens were irradiated in the chamber of the ILU-2 ion accelerator. It was found that the thickness of the oxide film increases in proportion with the energy of the ions and decreases as the ion current density increases. The dielectric strength of the insulating layer was $(3-10) \cdot 10^6 \text{ W/cm}$. It is shown that the composition of the film depends on subsequent annealing.

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GUSEV, V. M., et al., Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71,
pp 1462-1467

By using ion oxidation to protect ion injected PN junctions, the authors
were able to synthesize high-voltage low-power diodes with a breakdown
voltage of 3.3 kV.

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UNCLASSIFIED
ABSORPTION OF LIGHT ON CHARGE CARRIERS IN STRONGLY DOPED SILICON
AND GERMANIUM -U-

PROCESSING DATE--20NOV70

AUTHOR--(C2)--STRELTSOV, L.N., TITOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. PCLLPRCV. 1970, 4(4), 715-21

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SILICON, GERMANIUM, DOPED ALLOY, HALL EFFECT, ABSORPTION
COEFFICIENT, ION BOMBARDMENT, ELECTRIC CONDUCTIVITY, METAL FILM, LIGHT
ABSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0484

CIRC ACCESSION NO--AP0126236

STEP NO--UR/0449/70/004/004/0715/0721

UNCLASSIFIED

2/2 037

CIRC ACCESSION NO--AP0126236

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, THE TRANSMISSION AND REFLECTION SPECTRA OF SI AND GE LAYERS, STRONGLY ALLOYED BY THE ION BOMBARDMENT METHOD, WERE INVESTIGATED. AN ANAL. OF THE SPECTRAL DEPENDENCES OF THE ABSORPTION COEFF. REVEALS THAT THE ABSORPTION OF LIGHT BY CHARGE CARRIERS IN THESE ELEMENTS IS SUITABLE DESCRIBED BY DEPENDENCES CALCD. FOR THE CASE OF CARRIER SCATTERING BY ACOUSTICAL VIBRATIONS OF THE LATTICE CONTRADICTING EXISTING DATA ON THE TEMP. DEPENDENCES OF THE HALL EFFECT AND ELEC. COND. THE CONTRADICTION IS EXPLAINED BY THE DIFFERENCE IN CHARACTER OF LIGHT ABSORPTION PROCESSES AND THE HALL EFFECT AND ELEC. COND.

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"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310019-0

UNCLASSIFIED
SERIES OF LABDADIENES -U-
AUTHOR-1021-PCPA, D.P., TITOV, V.V.
COUNTRY OF INFO-USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 956-7.
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, EPOXY COMPOUND, WOOD CHEMICAL PRODUCT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1330
CIRC ACCESSION NO--AP0135004
STEP NO--UR/0366/70/006/005/0956/0957
UNCLASSIFIED
PROCESSING DATE--20NOV70
SELECTIVE EPOXIDATION IN A

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310019-0"

CIRC ACCESSION NO--AP0135004
ABSTRACT/EXTRACT--(U) CP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THE EPOXIDATION OF DELTA PRIME8(20),13-15-HYDROXYLABDADIENE (I) OR ITS 15-ACETOXY ANALOG WITH 1 EQUIV. MONOPEROXYPHthalIC ACID GAVE SELECTIVELY 13,14-EPOXY I DERIV. OR ITS 15-ACETOXY ANALOG. THE EPOXIDATION OF DELTA PRIME8(20),13-14-FORMYLLABDADIENE (II) GAVE THE CORRESPONDING DELTA PRIME13-8,20-EPOXY DERIV. CALY. - IN THE CASE OF II, A SMALL AMT. OF THE DIEPOXIDE WAS ALSO FORMED. THE EPOXIDATION OF DELTA PRIME8(9),13-15-ACETOXYLABDADIENE GAVE EXCLUSIVELY DELTA PRIME13-8,9-EPOXY-15, ACETOXYLABDADIENE. FACILITY: INST. KHIM., KISHINEV, USSR.

UNCLASSIFIED

USSR

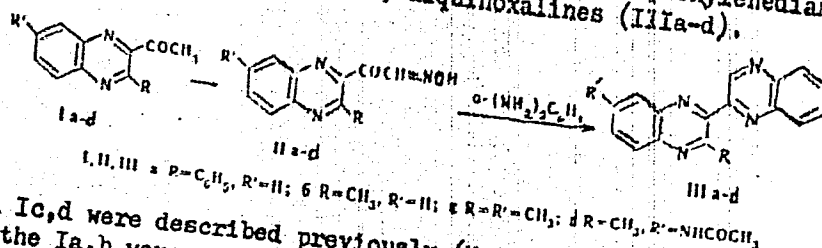
Nitrogen Compounds

UDC 547.863.15.07:542.953

TITOV, V. V., KOZHOKINA, Scientific Research Institute of Organic Intermediate Products and Pigments, Moscow

"Acylquinoxalines. II. Synthesis of 2-phenyl and 3-methyl-2,2'-biquinoxalines" Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1289-1290

Abstract: In order to synthesize asymmetric biquinoxalines, derivatives of 22-acetylquinoxaline were used which on nitrosation give monooximes of quinoxalyl-2-glyoxals (IIa-d). By the reaction with o-phenylenediamine the latter were reduced to 3-R-7-R'-2,2'-biquinoxalines (IIIa-d).



The initial Ia,d were described previously (V. V. Titov, et al., KhGS, 1423, 1971), and the Ia,b were synthesized by a previously described method

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TITOV, V. V., KOZHOKINA, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1289-1290

(F. Sachs, Ber., No 34, 3047, 1901; No 35, 3307, 1902) where the reaction of 1-phenylbutanetrione-1,2,3 with o-phenylenediamine leads to the formation of a mixture of two isomers -- 3-phenyl-2-acetylquinoxaline (Ia) and 3-benzoyl-2-methylquinoxaline (IV). The isomers were separated chromatographically. In their infrared spectra 1,670 cm^{-1} and 1,716 cm^{-1} bands were detected respectively which correspond to the oscillations of the carbonyl group of the benzoyl and acetyl substitutions. According to the paramagnetic resonance spectral data the product formed in the reaction comprises a mixture of Ia and IV (2,3). The synthesis procedures and results are outlined for the indicated compounds.

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USSR

UDC 547.567.5 + 547.26'118

TITOV, Ye. A., and AVDEYENKO, A. P., Dnepropetrovsk Chemical-Technological
Institute Imeni F. E. Dzerzhinskiy

"Reaction of N,N'-bis-Aren(alkane)sulfonyl-1,4-quinonediimines With Dialkyl
Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1686-1691

Abstract: Reaction of N,N-bis-aren(alkane)sulfonyl-1,4-quinonediimines (I) with dialkyl phosphites leads to the formation of dialkyl (N-4-arenesulfone-amidophenyl-N-arenesulfonyl)amidophosphates. The structures of these products were proposed on the basis of IR and PMR spectra as well as from the number of labile hydrogens. It was established that along with the phosphorylation of (I) there occurs a competing oxidation-reduction process, which is possible because of higher redox potentials of quinonediimines in comparison to quinone-monoimines. The ability of the dialkyl phosphites to react via the phosphorylation reaction increases in the following order: $(\text{MeO})_2\text{POH} < (\text{EtO})_2\text{POH} < (\text{BuO})_2\text{POH} < (\text{AmO})_2\text{POH}$.

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USSR

TITOV, Ye. A., and AVDEYENKO, A. P., Dnepropetrovsk Chemical Technological Institute

UDC 547.567.5+547.26'118

"Reaction of N-Arenesulfonylbenzoquinoneimines With Dialkyl Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 797-799

Abstract: To 30 g diisopropyl phosphite heated to 110-120°, 13.05 g N-p-toluenesulfonyl-1,4-benzoquinoneimine was added portionwise. The reaction was continued with heating as long as a positive indophenol test could be observed. After cooling the reaction mixture was dissolved in 100 ml benzene and chromatographed on alumina. The portion eluted with benzene was concentrated, the solid crystallized after few days yielding diisopropyl 4-(p-toluylsulfonamido)phenyl phosphate, m.p. 102-103.5°. Analogously the diethyl 4-benzylsulfonamido-2,6-dichlorophenyl phosphate, m.p. 1.2733, n_D^{20} 1.5561 and diethyl 4-benzylsulfonamidophenyl phosphate, m.p. 73-74.5° were obtained. When diisopropyl phosphite and N-benzylsulfonyl-2-chloro-1,4-benzoquinoneamide were allowed to react in chloroform at 20°, diisopropyl 4-benzylsulfonamido-2-chlorophenyl phosphate, d_4^{20} 1.644, n_D^{20} 1.5373 was obtained after 2 months.

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USSR

UDC 547.567.5

TITOV, Ye. A., and SUKHINA, N. K., Dnepropetrovsk Chemical-Technological
Institute imeni F. E. Dzerzhinskiy
"N,O-Diacylquinoneiminoximes"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 6, No 9, Sep 70, pp 1834-1837

Abstract: Reaction of acyl chlorides with quinoneiminoximes in organic solvents, in presence of aqueous sodium bicarbonate solution yields the title compounds. For example: to a solution of 1.22 g of 1,4-benzoquinoneiminoxime in 50 cc acetone 2.35 ml of p-toluyyl chloride was gradually added at 20-25° with stirring. The mixture was then cooled to 5-10°, 1.65 g of sodium bicarbonate in 20 cc water was added and stirred for 1 hr at 20-25° to yield N,O-di-p-toluyyl-1,4-benzoquinoneiminoxime, m.p. 175°. Other compounds were synthesized in this manner in yields ranging from 78 to 96%. In aqueous and alcoholic base these compounds hydrolyze yielding quinoneoximes and quinoneiminoxime salts, while in dilute inorganic acids their hydrolysis gives quinone-oxime esters.

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UNCLASSIFIED
TITLE--REACTION OF N-ARYLSULFONYLQUINONIMINES WITH PHENOLS -U-
AUTHOR--(02)--TITOV, YE.A., PODDUBEV, G.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. DKG. KHIM. 1970, 6(3) 544-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SULFONE, PHENOL, MOLECULAR STRUCTURE, IMINE, NAPHTHOL, PAPER
CHROMATOGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1410
CIRC ACCESSION NO--AP0112404
STEP NO--UR/0366/70/006/003/0544/0549
UNCLASSIFIED

009
CIRC ACCESSION NO--AP0112404
ABSTRACT/EXTRACT--(U) GP-0-
UNCLASSIFIED
PROCESSING DATE--02OCT70
ABSTRACT. THE REACTION OF RC SUB6 H SUB4 SO
SUB2 NHC SUB6 H SUB3 X(OH) 3,4 WITH PHENOLS (NAPHTHOLS) IN THE PRESENCE
OF BF SUB3. ET SUB2 O OR ALCL SUB3 GAVE RC SUB6 H SUB4 SO SUB2 NHC SUB6 H
SUB2 X(CH)R PRIME1 3,4,5 (I) (R, R PRIME1 AND X GIVEN): H,
2, HYDROXY, 1, NAPHTHYL, CL; H, 2, HYDROXY, 1, NAPHTHYL, H; 4, ME,
2, HYDROXY, 1, NAPHTHYL, H; 4, CL, 2, HYDROXY, 1, NAPHTHYL, H; 4, ME,
SUB4, H; H, 4, 3, (HO)MEC SUB6H SUB3, H; 4, ME, 4, HOC SUB6 H SUB4, H; 4, MF,
4, 3, (HO)MEC SUB6 H SUB3, H. THE STRUCTURES OF I WERE PROVEN BY THE
COLOR REACTIONS OF ITS HYDROLYSIS PRODUCTS (DERIVS. OF P-AMINOPHENOL),
THE DIAZO COUPLING OF THE HYDROLYSIS PRODUCTS WITH 1 NAPHTHOL, AND THE
CONCURRENT OXIDN. OF I AND EXCESS PHOH WITH K SUB3 FE(CN) SUB6 IN AQ. NH
SUB4 OH SOLN. WHICH GAVE 2 INDOPHENOLS (SEPD. BY PAPER CHROMATOG.).
THESE REACTIONS ELIMINATE THE ALTERNATIVE STRUCTURE: RC SUB6 H SUB4 SO
SUB2 NRC SUB6 H SUB3 X(OH), 3,4.

UNCLASSIFIED

USSR

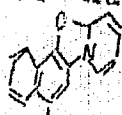
TIROV, YE. A. and SUKHINA, N. K.

UDC 547.7/8

"Reaction of N-arenesulfonylnaphthoquinonimines with Pyridine"

Khim tekhnologiya. Resp. mezhd. nauchno-tekhn. sb. (Chemical Technology: Republican Inter-Higher Educational Institutional Scientific-Technical Collection of Works), 1968, No 14, pp 43-47 (from RZh-Khimiya, No 1(I), 10 Jan 70, Abstract No 1 Zh 428)

Translation: A new reaction of N-arenesulfonylnaphthoquinonimines-1,4 with pyridine, forming a compound (I, R = Ph or n-tolyl), was described. A study was made of properties and the infrared spectra of I. A colored



reaction with primary amines was proposed. 0.01 Mole of N-(n-toluenesulfonyl)-naphthoquinonimine-1,4 was dissolved in 50 ml of pyridine; 50 ml of water was added for dilution at 20°; the mixture was stirred for 30 minutes; it was then poured into 500 ml of water; the resulting solution was filtered; the precipitate was washed with water and ether; dried at 40-50°; dissolved in heated 15% HCl; and

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USSR

TITOV, YE. A. and SUKHINA, N. K., Khim. tekhnologiya. Resp. mezhd. nauchno-tekhn. sb., 1968, No 14, pp 43-47 (from RZh-Khimiya, No 1(I), 10 Jan 70, Abstract No 1 Zh 428)

I (R = n-tolyl) was precipitated with 5% NaOH. $C_{22}H_{18}N_2O_3S$, yield 75%, melting point 191.5° (decomposes). I (R = Ph) was similarly obtained, $C_{21}H_{16}N_2O_3S$, yield 75%, and melting point 179° (decomposes; acetone).

V. N. Ufimtsev

2/2

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TITLE--N,H VALENCE VIBRATION FREQUENCIES OF CARBOXYLIC ACID HYDRAZIDES -U-
AUTHOR--(02)-CHEKUSHIN, S.I., TITOV, YE.V.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(4), 817-18
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL VALENCE, VIBRATION FREQUENCY, CARBOXYLIC ACID, AZIDE,
IR SPECTRUM, AMINE DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0811
CIRC ACCESSION NO--AP0124478
STEP NO--UR/0051/70/028/004/0817/0818
UNCLASSIFIED

CIRC ACCESSION NO--AP0124478 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN IR SPECTRA OF CARBOXYLIC ACID
HYDRAZIDES OF THE TYPE RCONHNH SUB2 2 ABSORPTION BANDS ARE OBTAINED AT
3330 AND SIMILAR TO 3450 CM PRIME NEGATIVE1 INSTEAD OF THE EXPECTED 3
BANDS. THIS IS ATTRIBUTED TO THE FACT THAT THE SYM. VALENCE VIBRATION
OF N-H OF THE PRIMARY AMINO GROUP IS VERY PRONOUNCED, WHEREAS ITS
ANTISYM. VIBRATION INTERACTS WITH THE VALENCE VIBRATION OF THE RADICAL
LARGER THAN N-H. THE RESULT OF THIS INTERACTION IS THAT THEY ARE NOT
SEPD. IN THE SPECTRUM. FURTHERMORE, BECAUSE OF THIS INTENSE INTERACTION
THE LAST 2 VIBRATIONS WILL BE AFFECTED BY INTERNAL AND EXTERNAL FACTORS
AND THEIR SEPN. WILL NOT COME ABOUT. AMONG THE INTERNAL FACTORS ARE THE
VARIOUS SUBSTITUENTS AND THE EXTERNAL FACTORS ARE THE VARIOUS SOLVENTS.

PROCESSING DATE--13NOV70

UNCLASSIFIED

USSR

UDC 621.383.89

TITOV, YU. A., SHELEPETS, V. I., OKSYUTICH, N. B.

"Codoscope Type Cathode Ray Tube"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsov, Tovarnyye Znaki, No 16,
8 May 70, p 57, Patent No 270102, Filed 20 Dec 67

Translation: This Author's Certificate introduces a codoscope type cathode ray tube containing recording and reproducing projectors, address plates, a control assembly, a potential carrier assembly and a luminescent output screen. The tube is distinguished by the fact that in order to insure high speed of recording the parallel binary code and to decrease the amplitude of the control signals, the control assembly comprises a system of parallel deflecting plates separated by dielectric and arranged perpendicular to the plane of the beam in direct proximity to the potential carrier.

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USSR

GORBUNOV, G. M., TITOV, Yu. I.

"Depth of Penetration of Nonisothermal, Transverse, Individual Stream into a Channel with Constriction"

Tr. Mosk. Aviats. In-ta [Works of Moscow Institute of Aviation], 1972, No 248, pp 101-111 (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No 5B350, by I. M. Baskin).

Translation: Results are presented from experimental studies of an individual stream in a rectangular channel with a constriction, a model of a section of a circular combustion chamber of a gas turbine engine with a large radius of curvature. The studies were performed in order to determine the regularities of development of transverse streams in a moving stream with high temperature in channels with various constrictions. The experimental installation and plan of measurements are described. The model chamber has a square cross section with sides of 200 mm. The air was divided into the primary air supply for creation of the stream in the model chamber and the secondary air supply for creation of streams flowing from a side chamber, moving perpendicularly to the main stream. It is concluded that as the side stream flows into a

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USSR

GOREUNOV, G. M., TITOV, Yu. I., Tr. Mosk. Aviats. In-ta, 1972, No 248, pp 101-111.

limited channel of variable cross section, the relative depth of penetration decreases with increasing constriction of the output cross section, if the distance from the mouth of the stream to the beginning of the constriction is less than the diameter of the chamber. It is demonstrated that a change in initial nonisothermal conditions of the mixing streams has no significant influence at the exit from the combustion chamber on relative depth of penetration and its decrease with increasing constriction. 7 biblio. refs.

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- 125 -

ELECTROPRODUCTION ON CARBON -U- UNCLASSIFIED

PROCESSING DATE--30OCT70

AUTHOR--(05)--LITOV, YU.J., STEPULA, YE.V., AFANSAYEV, N.G., AKHMEROV, R.V.,
BYVALIN, S.A.
COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(2), 257-65
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SCATTERING, INELASTIC SCATTERING, HIGH ENERGY
PARTICLE, CARBON, SECONDARY EMISSION, PION, SPECTRUM ANALYSIS,
DIFFERENTIAL CROSS SECTION, PARTICLE PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1946

CIRC ACCESSION NO--AP0120589

STEP NO--UR/0185/70/015/002/0257/0265

UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- UNCLASSIFIED
PROCESSING DATE--30OCT70
ABSTRACT. SPECTRA OF INELASTIC E SCATTERING
WERE MEASURED AT THE INITIAL ENERGY OF 1150 MEV IN THE ANGULAR RANGE
25-60 DEGREES. THE MONOCHROMATIZED BEAM OF E FROM A LINEAR ACCELERATOR
FELL ON THE HARD C LAYER 0.02 RADIATION LENGTH THICK. THE SECONDARY
PARTICLES WERE ANALYZED BY MEANS OF A MAGNETIC SPECTROMETER;
IDENTIFICATION AND COUNTING OF PARTICLES WAS PERFORMED BY THE SHOWER
COUNTER CONSISTING OF PB GLASS AND PHOTOMULTIPLIER. EACH SPECTRUM SHOWS
2 PEAKS, ONE OF WHICH IS TREATED AS QUASI ELASTIC SCATTERING AND THE
OTHER AS THE PION PRODUCTION ON THE PRIME12 C N. THE PION
ELECTROPRODUCTION CROSS SECTION CAN BE DESCRIBED AS A SUM OF CROSS
SECTIONS FOR THE ELECTROPRODUCTION OF FREE N. THE DEPENDENCE OF THE
CROSS SECTION ON THE 3 MOMENTUM TRANSFER IN THE ELECTROPRODUCTION PEAK
ALLOWS THE MAIN REGULARITIES TO BE ESTABLISHED OF THE DELTA SUB1238
ISOBAR ELECTROPRODUCTION OF A FREE RHO. THE MEASUREMENTS LEADS TO THE
CONCLUSION THAT THE QUASI ELASTIC SCATTERING AND ELECTROPRODUCTION OF
PIONS ON N PLAYS THE DOMINANT ROLE. THE QUANT. AGREEMENT OF THEORY AND
EXPTL. RESULTS IS SATISFACTORY ONLY AT SMALL TRANSFERRED MOMENTUMS (25
AND 35 DEGREES). AT LARGE MOMENTUMS THE PARAMETERS CHARACTERIZING THE
DIFFERENCE BETWEEN THE FREE AND NUCLEUS N HAS TO BE TAKEN INTO ACCOUNT.
FACILITY: FIZ.-TEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.6:621.318(088.8)

RUBAL'SKAYA, E. V., GENDELEV, S. Sh., RUBINSHTEYN, B. Ye., YAKOVLEV, Yu. M.
TITOVA, A. G.

"A Charge for Growing Ferrite Single Crystals"

USSR Author's Certificate No 253953, filed 4 May 67, published 30 Apr 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V422 P)

Translation: This Author's Certificate introduces a charge composition which makes it possible to increase the saturation induction of ferrites (90.5 T) while retaining a narrow ferromagnetic resonance line. The charge consists of higher oxides of iron, zinc, lead and boron (13.3-16.0, 0.3-1.8, 68.1-68.7 and 10.4-11.0 wt.% respectively), and Li_2CO_3 . Heat treatment conditions are described. Also covered by the patent is a charge composition for making ferrites with a saturation induction of up to 0.44 T; a distinguishing feature of this composition is the substitution of gallium oxide for zinc oxide. The proportions by weight are also changed. N. S.

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USSR

RUBAL'SKAYA, E. V., PETROV, T. G., and TITOVA, A. G.

UDC 548.58

"Study of the Solubility of Lithium, Nickel, and Magnesium Ferrites in PbO—B₂O₃"

Moscow, Kristallografiya, Vol 15, No 5, Sep-Oct 70, pp 1094-1096

Abstract: A study was made of the temperature dependence of the solubility of lithium, nickel, and magnesium ferrites in the solvent PbO—B₂O₃. The solubility data were obtained by determining the solution saturation temperature on the basis of growth -- the dissolution of seeds from the crystallized materials. A somewhat smoothed bend of the solubility curve was found in the 1000° C region for lithium ferrite and the 1200° C region for nickel ferrite, most clearly expressed on the plot by the derivative $\partial c / \partial T = f(T)$.

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Space Biology

USSR

UDC 591.488.4-135.044:597.82

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., GOVARDOVSKIY, V. I.,
GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z.,
MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P.,
KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional
Morphology, Institute of Evolutionary Physiology and Biochemistry imeni
I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog *Rana*
temporaria in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3,
May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate
vestibular apparatus, 43-hour artificially fertilized *Rana temporaria* eggs
were subjected to a 40-hour flight in the Soyuz-10, after which they were
fixed and observed with an electron microscope. Embryos in the early gastrula
stage were used to ensure that takeoff acceleration was experienced prior to
establishment of definitive vestibular apparatus, in light of evidence that
acceleration does have considerable impact on receptor cell development at
the later stages. Normal development proceeded to the tail bud stage during
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USSR

VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

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Organophosphorous Compounds

USSR

UDC 632.954

3

GRAPOV, A. F., LEBEDEVA, N. V., MEL'NIKOV, N. N., SERGEYEVA, T. A., STONOV, L. D., TITOVA, L. M., and VOLKOTRUB, E. N., All Union Scientific Research Institute of Chemical Means of Plant Protection

"A New Herbicide Called Isophos"

Moscow, Agrokhimiya, No 1, 1972, pp 96-103

Abstract: Herbicidal properties of isophos-1, $\text{ClCH}_2\text{P}(=\text{S})(\text{NHC}_4\text{H}_9\text{-sec.})(\text{OC}_6\text{H}_3\text{Cl}_2\text{-2,4})$, and isophos-2, $\text{ClCH}_2\text{P}(=\text{S})(\text{NHC}_3\text{H}_7\text{-iso})(\text{OCOH}_3\text{Cl}_2\text{-2,4})$, were tested on many plants, including

cockspur grass (*Echinochloa crus-galli*), and rice grass (*Echinochloa oryzicola*), the weeds which commonly grow with rice. Application of 2-6 kg isophos-1 or isophos-2/ha killed 100% of the above weeds. The best time for application of the herbicides was before sowing of rice, or prior to its sprouting. A surface application produced the best results. Both types of isophos in 4-8 kg/ha doses were toxic to garden orache, amaranth, and white bent. Field pennycress, spring wild oat, and knotweed were of average sensitivity toward isophos.

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ГРАФОВ, А. Ф., et al., Agrokhimiya, No 1, 1972, pp 96-103

Among the cultivated plants, rice was most resistant toward this herbicide, followed by wheat, oats, and barley (most sensitive). Cotton, beans, radishes, and sunflowers are resistant to isophos, but sugar beets and flax are sensitive. Carrots were most resistant to isophos in doses of 1-4 kg/ha and tomatoes and cucumbers showed medium resistance. Isophos was 100% effective against rice grass in meadow-marshy, soddy-podzolic, and sierozem soils. It was only 83-97% effective in soils with high humus content. Analysis of the soil horizons indicated that it remained mainly in the top 0-10 cm of soil. The structure of the aryl radical determines the phytotoxic properties of amides of thio- and dithiophosphonic acids. Presence of two Cl atoms in the phenyl group increases the herbicidal effects of these compounds.

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UDC 582.28-11

USSR

TITOVA, L. M., Institute of Microbiology and Virology, Academy of Sciences
~~USSR~~

"Amino Acids as the Only Source of Nitrogen for Toxin-Forming Fungi"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 2, Mar/Apr 71, pp 159-164

Abstract: Twenty-five amino acids were studied as the single source of nitrogen required for growth of highly toxic *Dendrochium toxicum* str. 5,800, *Fusarium sporotrichiella* str. 319 and *Stachybotrys alterans* str. 12694. Only some amino acids studied compared to potassium nitrate as the sole source of nitrogen required for growth. Most of them could be utilized to some extent, while the sulfur-containing amino acids inhibited considerably growth of the strains studied. It is believed that all these strains have a well developed enzyme system which is utilized in synthesis of all the amino acids that they need, since the growth of mycelium on the nitrate medium was by far the greatest. Amino acids affected considerably the synthesis of toxic substances: in case of *D. toxicum* a much higher toxicity (as compared to the toxicity with KNO_3) was observed with the following amino acids: Threonine, serine, proline, ornithine, tyrosine, and β -phenyl- β -alanine. With *F.*

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USSR

TITOVA, L. M., Mikrobiologicheskii Zhurnal, Vol 33, No 2, Mar/Apr 71,
pp 159-164

sporotrichiella higher toxicity was observed on glutamic and γ -aminobutyric
acids, tryptophan, valine, isoleucine, tyrosine, aspartic acid, proline,
and with St. alternans -- on threonine, proline and α -alanine.

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USSR

UDC 632.95

STONOV, L. D., SERGEYEVA, T. A., SIMONOV, V. D., SHOGAN, S. M., RADTSEV, V. S., and TITOVA, L. M.

"Yalan -- New Herbicide for Control of Echinochloa Weeds in Rice Plantings and Wild Oats in Wheat Plantings"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), Vyp 1, Moscow, 1970, pp 174-179 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13K518 by T. A. Belyayeva)

Translation: Yalan (I) is a highly effective soil herbicide for the control of millet weeds in rice plantings. Tests have been made of a 60-percent emulsion concentrate and a 10% granulated preparation of I. The herbicidal action of I in the soil persists for 50-100 days. Before rice is planted, I is applied and worked in by harrow in doses of 2-6 kg/ha. For wild-oat control, I is applied in doses of 3-6 kg/ha before wheat is planted.

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Burn Studies

USSR

KRUSHCHEVA, Ye. A., Deceased, ~~TITOVA, M. I.~~, and MASLOVA, T. M., Burn Center, Clinic-Diagnostic Laboratory, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"State of the Blood Coagulation System in Burn Sickness"

Moscow, Sovetskaya Meditsina, No 5, 1972, pp 110-114

Abstract: To study blood coagulation during burn sickness, the blood of 60 patients in varying stages of the illness was investigated. The toxemia phase was characterized by an isolated decline in fibrinolytic activity and a rise in coagulating fibrinogen B level. Normal activity of free heparin, prothrombin index and, in 50 percent of the cases, the Lorand fibrin stabilizing factor were noted. Patients in the septic-toxemic phase showed further depression of fibrinolysis and a higher quantity of fibrinogen B, again with normal levels of heparin, prothrombin index and blood fibrinase. The action in these phases may be considered a defense mechanism of the body to protect fibrinogen from the disintegration which all proteins are subject to in burn sickness. Six persons with thrombotic complications had hypercoagulation with a lowered level of fibrinolysis, raised level of coagulating fibrinogen B, lowering of heparin and activation of the fibrin stabilizing factor. Ten

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USSR

KRUSHCHEVA, Ye. A., et al., Sovetskaya Meditsina, No 5, 1972, pp 110-114

cases of burn exhaustion showed hypocoagulation with elevated levels of fibrinolysis, lowered fibrinogen, increased heparin and lessened blood fibrinase and prothrombin index. With convalescence, normalization of coagulation values occurs.

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USSR

UDC 621.357.12:661.183.12

KLIMOVA, Z. V., SALDADZE, K. M. and TITOVA, N. A.

"Ion Permeability and Electroconductivity of MK-40 and MA-40 Heterogeneous Membranes in Solutions and Sodium Sulfate and Magnesium Sulfate"

V sb. Ionoobmen. materialy v nauke i tekhn. (Ion Exchange Materials in Science and Technology--collection of works), Moscow, 1969, pp 102-107 (from RZh-Khimiya, No 1(II), 10 Jan 70, Abstract No 1 1270)

Translation: Electroconductivity ($\bar{X}$) and transport number ($\bar{t}_1$) were studied in heterogeneous mechanisms in Na_2SO_4 and MgSO_4 solutions in different concentrations. it is shown that $\bar{t}_1$ and $\bar{X}$ are determined, first of all, by properties of the counterion (Ci). The greater its affinity to ionogenic groups, the lower the mobility of the Ci in the ion-exchange resin and the lower the values of $\bar{t}_1$ and $\bar{X}$. The nonexchange absorption of the electrolyte is simultaneously increased, which explains the established dependence of $\bar{t}_1$ and $\bar{X}$ on the concentration of the external solution: as the valency of the Ci increases, the effect of this factor grows.

M. V. Pevnitskaya

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USSR

UDC 616-099-612.014.46

TITOVA, N. N. and BADIUGIN, I. S., Chair of Labor Hygiene and Occupational Diseases Kazan' Medical Institute of the Order to Labor Red Banner imeni S. V. Kuroshov

"Acute Intoxication with Chlorophos (Dipterex)"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 1, Jan/Feb 70, pp 37-40

Abstract: Chlorophos is a toxic agent whether inhaled, taken orally, or absorbed through skin. Only initial symptoms are different, depending on the route of entry. Most of the symptoms are suggestive of cholinergic pathology. Chlorophos may circulate in blood for up to five days, and is excreted from the body for 10-15 days, so purging of the gastrointestinal tract, dialysis, blood transfusions, and forced diuresis should be maintained for several days. Since in basic medium chlorophos converts to toxic dimethyl-2,2-dichlorovinyl phosphate, acidic oxidative agents should be used as a rule. The following agents are recommended for treatment of chlorophos poisoning: IV injections of dipyroxime solution and purified cholinesterase, atropine injections every 20-30 min to the point of overatropinization.

USSR

SYCHEVA, S. P., et al., Moscow, Doklady Akademii Nauk SSSR, Vol 191, No 1, 1970, pp 240-243

In the Hill reaction, MNP is entirely negative in non-cyclic phosphorylation, weak in cyclic phosphorylation and somewhat active in pseudocyclic phosphorylation. Generally the Hill reaction is more sensitive in the presence of phosphate acceptors, which necessitates further study.

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USSR

GORYACHIKH, A. A., TAKIBAYEV, Zh. S., TITOVA, N. S., and SHALAGINA, Ye. v.,
Kazakh State University

"Angular Distribution of Star Tracks Formed by π -Mesons Having an Energy of 60 GeV on Heavy Nuclei of a Photoemulsion"

Moscow, Yadernaya Fizika, Vol 13, No 6, Jun 71, pp 1267-1269

Abstract: The authors study the angular distributions of thin, gray, and black tracks in spallations formed by Ag and Br π -mesons having an energy of 60 GeV. The distributions obtained are compared with the angular distributions of star tracks formed by protons having an energy of 2.26 and 19.5 GeV. The investigation involved 170 stars formed by the interaction with heavy nuclei of an ion photoemulsion having an energy of 60 GeV. With the aid of schematics the authors depict the angular distribution of the thin and gray tracks of these spallations. They find that the angular characteristics of the gray tracks are independent of energy and nature of the primary particle. The research is supported by equations as well as the tables and figures. The article contains two tables, two figures, and a bibliography of two titles.

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USSR

UDC 539.374

GREKHOV, V. A., MANZHELEY, V. I., MITROFANOV, V. V., NIKOLAYEV, V. P.,
TITOVA, N. S., SHOYKHET, G. Ya.

"Experimental Study of the Strength of Thin-Walled Rectangular Tube Under
Cyclic Axial Loading in the Elastic-Plastic Region"

V sb. Dinamika splosh. sredy. Vyp. 8 (Dynamics of a Continuous Medium.
No. 8 -- Collection of Works), Novosibirsk, 1971, pp 144-151 (from RZh-
Mekhanika, No 8, Aug 72, Abstract No 8V361)

Translation: The strength of a tube with a transverse cross section in the
form of a rectangular trapezoid welded at the ends to fixed rigid parts
under a cyclic temperature effect was studied. Experiments were made on
the object itself and on models, reduced tubes of rectangular cross section.
The tube was subjected to a variable load and cooling up to given tempera-
tures. The models were deformed without changing the temperature, com-
pression was achieved up to a given deformation, and stretching was achieved
up to a given value of the axial force. The material for the tube and the
models was Kh18Ni10T steel. Test results based on 100 cycles are discussed.
Stability losses in the walls and limited growth of deformation under the
first cycles are noted. The test ended with the formation of cracks in some
cases. D. A. Gokhfel'd.
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1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ALLERGENIC PROPERTIES OF THE COTTON AND FLAX SPINNING MILLS DUST
-U-
AUTHOR--(03)-FETISOVA, A.A., TITOVA, S.M., ALEKSANDROVA, O.G.
COUNTRY OF INFO--USSR
SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 5, PP
19-22
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TEXTILE INDUSTRY, NATURAL FIBER, DERMATITIS, ALLERGIC DISEASE,
ANAPHYLAXIS, INDUSTRIAL MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0692 STEP NO--UR/0391/70/000/005/0019/0022
CIRC ACCESSION NO--AP0117917
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117917

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS INCLUDED CUTANEOUS SCARIFICATION TESTS IN WORKERS OF COTTON AND FLAX SPINNING MILLS, ANAPHYLAXIA WITH DESENSITIZATION EXPERIMENTS IN GUINEA PIGS, ALONG WITH STAGING OF INTRADERMAL AND SCARIFICATION TESTS IN SENSITIZED ANIMALS, WHEREFROM THE FOLLOWING INFERENCES ENSEW: 1. INDUSTRIAL DUST OF COTTON AND FLAX SPINNING MILLS IS AN ALLERGEN; 2. POSITIVE SKIN TESTS ARE RECORDED NOT ONLY IN PATIENTS WITH IMPAIRED BRONCHOPULMONARY SYSTEM BUT ALSO IN PRACTICALLY HEALTHY SUBJECTS, WHICH, APPARENTLY, IS INDICATIVE OF A LATENT NATURE OF THE ALLERGY; 3. ANTIGENIC PROPERTIES OF THE INDUSTRIAL DUST ARE DUE TO THE PRESENCE THEREIN OF BACTERIA AND FUNGI; 4. THERE IS AN AFFILIATION BETWEEN THE DUST GENERATED AT COTTON AND FLAX SPINNING MILLS, CONDITIONED BY THE HOMOGENEITY OF THE FUNGAL AND BACTERIAL FLORA. FACILITY: MEDITSINSKIY INSTITUT, ALLERGOLOGICHESKAYA LABORATORIYA AMN INSTITUT GIGIYENY TRUDA I PROFZABOLEVANIY AMN SSSR.

UNCLASSIFIED

Epidemiology

USSR

UDC 614.449.577.1

DREMOVA, V. P., TITOVA, T. S., SMIRNOVA, S. N., GRIGOR'YEVA, YE. M., BELAN, A. A.,
and FUNDATOR, R. KH., Central Scientific Research Disinfection Institute, Ministry
of Health USSR

"Mechanical Protection From Mosquito Bites by Means of Specially Woven Cloth"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 4,
Jul/Aug 70, pp 458-462

Abstract: Jackets were made of cotton cloth with pore openings no more than 0.05 to 0.08 mm in diameter on the assumption that such openings would be too small to permit penetration of the mosquito's proboscis. Laboratory tests (insertion of an arm in a sleeve made from the cloth into a box containing mosquitoes) and field trials (wearing of the jackets by workers during the summer) showed that the material provided 100% protection against mosquitoes without irritating the skin. The cloth is wear- and tear-resistant, light, and launders well.

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USSR

UDC 621.315.593:535.376.2

BORODIN, YU.P., VORONIN, V.G., RYZHIKOV, I.V., TITOVA, V.F.

"Investigation Of Luminescence Of n- and p-Regions And Structures Of Diffused And Epitaxial Junctions Based On GaAs"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1969, Issue 7(50), pp 53-60 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B280)

Translation: A method is presented for obtaining synchronous (in space) measured photo- and electropotentials, the intensities of photo- and electroluminescence, and also the spectra of photo- and electroluminescence at slanting microsections of p-n junctions of GaAs. p-n and p⁺-p-n structures were revealed, with photoluminescence both in the p- and in the n-type. The minimum photoluminescence is obtained in the space charge layer because of separation of the carriers by the junction field. It is determined that the optimum concentration of Zn for luminescence is equal to $8 \cdot 10^{18} - 1.5 \cdot 10^{19} \text{ cm}^{-3}$. 5 ill. 14 ref. Summary.

1/1

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USSR

UDC 621.315:593.75

VORONIN, V. G., PETUKHOV, A. V., RYZHIKOV, I. V., TITOVA, V. F.

"Distribution of the Intensity of Recombination Emission and Potential Drop in Diffused p-n Junctions of Gallium Arsenide"

V sb. Fiz. elektronno-dyrochn. perekhodov i poluprovodn. priborov (Zh. "Fiz i tekhn. poluprovodnikov") (Physics of Electron-Hole Junctions and Semiconductor Devices -- Collection of Works) [Journal "Physics and Technology of Semiconductors"], Leningrad, "Nauka," 1969, pp 12-16 (from RZh-Elektronika i yeye primeneniye, No 4, Apr 70, Abstract No 4B294)

Translation: A method is described for determining the regions of a crystal with a p-n junction which emit recombination emission. The method is based on a combination of electrical and optical soundings of a crystal and can be used in the case where the crystal absorbs natural recombination emission. The method makes it possible to determine that region of the crystal which principally

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- 149 -

USSR

VERONIN, V. G., et al, V sb. Fiz. elektronno-dyrochn. perekhodov i poluprovodn. priborov (Zh. "Fiz i tekhn. poluprovodnikov", "Nauka," 1969, pp 12-16 (from RZh-Elektronika i yeye primeneniye, No 4, Apr 70, Abstract No 43294)

emits light, and to evaluate the electrophysical and optical parameters of this region (absorption coefficient, diffusion length, lifetime). As applied to diffused p-n junctions on a GaAs basis which emit infrared emission, it is shown that the emission is primarily emitted by the p-region adjacent to the space charge region of a p-n junction. The absorption coefficient of this region for recombination emission of p-n junctions in GaAs proved to be equal to 700 cm^{-1} , the diffusion length of the electrons 4-6 microns, and the lifetime of the electrons in the p-region $1.5 \cdot 10^{-8}$ -- $3.5 \cdot 10^8$ sec. 3 ill. 4 ref. Summary.

2/2

USSR

UDC 621.382:535.376(088.8)

VORONIN, V. G., KRUGLOV, I. I., RYZHIKOV, I. V., TITOVA, V. F.

"Investigation of Luminiscence and Potential Drop in Diffused P-N Junctions of Gallium Arsenide"

V sb. Arsenid galliya. (Gallium Arsenide -- Collection of Works), Vyp. 2, Tomsk, Tomsk University, 1969, pp 166-169 (From RZh-Elektronika i yeye primeneniye, No 4, Apr 70, Abstract No 4B293)

Translation: The distribution of the intensity of electrical luminiscence and potential drop in slanting thin sections of diffused p-n junctions of GaAs was investigated at the time of the creation of equipment for simultaneous measurement of the intensity of recombination emission and potential. It was shown that the emission is emitted by a p-region adjacent to the space-charge region of a p-n junction, and an evaluation was also made of the electrophysical parameters of the p-region: the diffusion length of the electrons, the absorption coefficient, and the lifetime.

3 ill. 4 ref. Summary.

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USSR

UDC 632.95

MEL'NIKOV, N. H., SHVETSOVA-SHILOVSKAYA, K. D., SAPOZHNIKOV, YU. N., PUSHINA, N. YA., and TITOVA, YE. B.

"Trichlorometaphos-3 Compound"

V sb. Khim sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 28-32 (from RZh-Khimiya, No 11, Jun 72, Abstract No 114396)

Translation: Trichlorometaphos-3 of formula $(\text{MeO})(\text{EtO})\text{P}(\text{S})\text{OC}_6\text{H}_2\text{Cl}_3-2,4,5$ (I) with a boiling point of $127^\circ/0.15$, $d_{40}^{20} 1.4345$, $n_D^{20} 1.5520$ is synthesized by reacting $(\text{MeO})(\text{EtO})\text{P}(\text{S})\text{Cl}$ with $2,4,5\text{-Cl}_3\text{C}_6\text{H}_2\text{ONa}$. Compound I is used against the larvae of butterflies, mites and flies. In order to purify the 80% commercial product, impurities are continuously steam-distilled utilizing a glass packing column. The purified product is dried at $90\text{-}100^\circ\text{C}$ and a pressure of $20\text{-}30$ mm for 1 hour. A diagram is presented of the column for purifying I.

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1/2 016
UNCLASSIFIED
TITLE--SOLUTION FOR POLISHING OPTICAL WINDOWS -U- PROCESSING DATE--04DEC70
AUTHOR--(04)-BURAVLEVA, M.G., SOYFER, L.M., TITOVA, YE.I., SHAKHNOVICH,
M.I.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 261,083
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--06JAN70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--OPTIC GLASS, OPTIC WINDOW, GLASS PROCESSING, PATENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1747 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0136987
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136987

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLN. FOR POLISHING OPTICAL
WINDOWS CONTAINED A MIXT. OF HBO SUB3, HCL, H SUB2 O, IN A 1:1:1 RATIO
AND A LIF ADDITIVE SMALLER THAN 1 G-200 CM PRIME3 MIXT. TO INCREASE
TRANSPARENCY.

UNCLASSIFIED

VOVSKIY,

I. M.

GROWING VEGETABLES AT SOVIET ANTARCTIC STATIONS

(Article by L.A. Podolny and I.M. Vovskiy, Arctic and Antarctic Scientific Research Institute, Leningrad, Antarktika, No 82, 1971, signed to press 3 June 1970, pp 77-79)

7748-55480
9 May 70

Soviet medical literature contains a considerable number of reports on the development of C hypovitaminosis in polar personnel on Antarctic expeditions. The majority of authors explain this fact as being due to a lack of fresh vegetables during the year, and that they gradually lose the vitamin C properties on storage (3, 5, 9, 10). It must be emphasized the vitamin C deficiency develops despite administration of synthetic

vitamins. The growing of vegetables directly at the polar stations acquires great importance. This is especially important in view of the fact that potatoes and other vegetables are not supported by vitamin C and therefore content (1, 4, 7).

Several attempts have been made at growing vegetables in the Antarctic. Thus, journalist V. V. Pashova treated the polar personnel of Vostok station in the Little America American station P. V. Astafenko observed an unsuccessful attempt to grow cucumbers and tomatoes (2).

Because Soviet literature contained no special reports on growing vegetables under antarctic conditions, we found it expedient to share the experience accumulated at the Novolazarevskaya station in 1961 and at the Kirovskaya station in 1967 and 1970. We chose the means of growing vegetables that are widespread in the Far North (6, 7).

In 1967 75 centimeters long and 15 centimeters wide and high, planted on vitamin pills, five bushes were planted, giving 223 square centimeters per plant. (The soil had been brought from Leningrad.) The seeds were mostly kept not for two days, and Mayak and Leningrad tomatoes. Their seeds were planted dry. The vegetables were planted both during the polar night and the polar day. The surrounding temperature was in the range of 21 to 25 degrees Centigrade.

USSR

UDC 541.127.128:547.241

LITVINENKO, L. M., TITSKIY, G. D., STEPKO, O. P., and KIRPENKO, N. P.,
Donetsk Branch of the Physical Organic Chemistry, Institute of Physical
Chemistry Imeni L. V. Pisarzhevskiy, Acad. Sc. Ukrainian SSR and Donetsk
State University

"Oxygen-Nucleophilic Catalysis of the Organophosphorus Acids With Amides.
The Effect of the Structure of the Catalyst and of the Acylated Arylamine
on the Catalytic Process"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1794-
1799

Abstract: The investigation was carried out on the structural effects of
N,N-dimethylamides of several phosphoric and phosphinic acids in respect to
their catalytic activity in the acylation reaction of various arylamines
with benzoyl chloride in benzene at 25°. Utilizing correlation analysis it
was shown that N,N-dialkylamides of the organophosphorus acids act as oxygen-
nucleophilic catalysts, analogously to phosphorus oxides.

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USSR

UDC 541.127.128:547.241

LITVINENKO, L. M., ~~TITSKIY, G. D.~~, and STEPKO, O. P., Donetsk Branch of the Physical-Organic Chemistry of the Institute of Physical Chemistry imeni L. V. Pisarzhevskiy, Acad. Sc. UkrSSR, Donetsk State University

"Phosphinic Acids as Bifunctional Catalysts in the Formation of Amide Bonds"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 5, Feb 72, pp 1127-1130

Abstract: Phosphinic acids may exhibit a bifunctional type of catalytic activity, analogously to carboxylic acids. This possibility was studied on the model of acylation of *m*-chloroaniline with acetic anhydride in benzene at 25°C. It was shown that in small quantities phosphinic acids substantially accelerated the reaction rate. Monofunctional compounds, such as *m*-nitrophenol, had no effect on the reaction. Quantitative comparisons have shown that phosphinic acids are as active as the carboxylic acids; their catalytic activity increases with increasing acidity. The catalytic activity of phosphinic acids is based on their ability to form cyclic transition complexes with amines which decompose into the final reaction products -- the amides and carboxylic acids.

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Single Crystals

USSR

UDC 669.871-52

ROVENSKIY, D. Ya., SHENDEROVICH, I. I., and ~~TYTYUNIK, L. N.~~

"The Effect of the Temperature Fluctuation on the Homogeneity of Single Crystals Grown From Melt"

Moscow, Tsvetnyye Metally, No 4, Apr 72, pp 54-55

Abstract: An experimental study was made of the effect of changes of the melt temperature in the interval from 0.025 to 10 °C on properties of gallium arsenide single crystals grown by the method of directed horizontal crystallization. It is demonstrated that the spectrum of disturbances is sufficiently wide, but a basic frequency with a ~15 sec period and a ~0.25 °C amplitude emanates and the fluctuation disturbances affect the heterogeneity of the material. The effect of compulsory periodic perturbations, with amplitudes from 0.5 to 2 °C and periods from 2 to 40 min was investigated. On the basis of experimental data, the requirements were formulated for a system with automatic control of the process of directed horizontal crystallization. Two illustr., four biblio. refs.

USSR:

UDC 615.916:264-31.06:617.001.28-092.9

KUSTOV, V. V., TIUNOV, L. A., VASIL'YEV, G. A., KEYZER, S. A., and IVANOVA, F. A., Moscow

"Combined Effects of Carbon Monoxide and Ionizing Radiation in a Chronic Experiment"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 5, 1971, pp 36-38

Abstract: Exposure of rats to carbon monoxide (0.012 mg/L) for 85 days inhibited the animals' growth, increased their resistance to hypoxia, and decreased the weight of the lungs and liver. Exposure of other rats to the same amount of CO and ionizing radiation (0.05 rem/day) for the same length of time had no effect on the animals' growth or resistance to hypoxia, but it decreased the weight not only of the lungs and liver but of the testes as well. In a second experiment, exposure of rats to ionizing radiation but at a lower dose of CO (0.005 mg/L) did not have any specific adverse effects, for in hematologic, biochemical, and morphologic respects the experimental animals virtually indistinguishable from the controls.

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USSR

UDC 577.1:615.7/9

KOLOSOVA, T. S., ~~TIUNOV, I. A.~~, KUSTOV, V. V., IVANOVA, L. V., VASIL'EV, G. A.
LEMESH, G. A., and AKHMATOVA, M. A.

"Toxic Effect of Gaseous Products of the Organism's Vital Activity"

V sb. Probl. kosmich. biol. (Problems in Space Biology -- Collection of Works),
Vol 16, Moscow, "Nauka," (Science), 1971, pp 182-190 (Russian) (from RZh-
Biologicheskaya Khimiya, No 20, 25 Oct 71, Abstract No 20F1687 from summary)

Translation: Rats were kept for 26 days in metal airtight chambers with
automatic O₂ supply and CO₂ excess removal. It was established that the
complex of gaseous substances given off by the organism causes lung tissue
damage and anemia, increases oxygen consumption and the weight of the
thyroid gland, and alters blood catalase activity.

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USSR

UDC 612.26

TIUNOV, L. A., KLIORIN, A. I., KOLOSOVA, T. S., IVANNIKOV, Yu. G., and
AKIMATOVA, M. A., Leningrad

"The Causes of Differences in Carbon Monoxide Concentration in Exhaled Air
in Man"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11,
1972, pp 1756-1759

Abstract: In man, carbon monoxide concentration in exhaled air normally varies from 2.9 to 25 mg/m³. It increases with increasing erythrocyte concentration. For example, when erythrocyte concentration is 4.71 million/mm³, the average CO concentration is 9.6 mg/m³ of exhaled air, and when the REC count is 5.34 million/mm³, CO concentration is 22.9 mg/m³. On the other hand, the concentration of catalase in the erythrocytes decreases with increasing hemoglobin concentration in blood; and with decreasing catalase, hemoglobin catabolism increases. The CO molecule is formed through incomplete oxidation of the carbon atom in the alaphamethylene bridge in the tetrapyrrole ring. Thus, CO production is proportional to hemoglobin catabolism, and it increases in hemolysis. Since 1.27 units of CO are produced for one equivalent unit of hemoglobin catabolized, other hem-containing compounds, such as myoglobin and 1/2

USSR

TIUNOV, L. A., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov,
Vol 58, No 11, 1972, pp 1756-1759

cytochromes, also contribute certain amounts of CO. However, the ratio of CO produced over hemoglobin catabolized is so constant that measurements of CO concentration in exhaled air can be used as an indirect method of determining erythrokinetics.

710 4370.1

(5)

EFFECT OF FREON-114B2 ON THE ACTIVITY OF ISOENZYMES OF LACTATE DEHYDROGENASE
UDC 577.358.347.01.04
(Article by A. I. Korbakova, V. A. Voronikhina, A. A. Dergunova, L. A. Litvincheva
and T. B. Kolesova, Kosmicheskaya Biologiya i Meditsina, Russian
Vol 5, No 3, September-October 1972, pp 87-89, submitted for publication
16 December 1971)

The literature contains information on the possibility of atmospheric contamination of closed spaces by chemical substances emanating from mechanisms, technical apparatus and different systems (Klemm, V. V., Kustov and L. A. Ilunov; Sliger). In particular, the attention of researchers has been drawn to the study of freons. For example, the presence of freon-114B2 in the air of American spacecrafts has been noted by Kessel, Stampert, Anderson and Sanders. It is emphasized that upon contact with heated surfaces the freons decompose, forming hydrogen chloride and fluoride and traces of phosgene (S. A. Teliepsen and R. A. Rastan; Wessell). Accordingly, study of the biological effect of freon-114B2 and the products of its decomposition is a timely problem.

The toxic effect of freon-114B2 has been studied by B. D. Karpov, A. I. Korbakova, et al. A relatively low toxicity, presence of a narcotic effect, and danger of products of pyrolytic decomposition have been noted (Korbakov). Taking into account that the narcotic effect is accompanied by hypoxia and accumulation of lactic acid in cerebral tissues (A. I. Korbakov and B. I. Khayida). In the case of intoxication by freon-114B2 one can expect changes in lactate dehydrogenase activity, since an excess of the substrate causes a considerable inhibiting effect on this enzyme (Korbakov and G. G. Orosenkhin and Demetov).

A change in lactate dehydrogenase activity was registered in intoxications by carbon monoxide (L. A. Ilunov and V. V. Kustov; Pocorn, et al.) and lead (Quarini and Catala). A change in the isoenzymes of lactate dehydrogenase has been described during hypoxia caused by an oxygen shortage (Yu. A. Yurlov) and in poisoning by styrene (Klein, et al.).

JRS 57577
15 Nov 72

USSR

UDC 621.37.32

TIUNOV, YU. A., and CHERNOV, V. S., Physicotechnical Institute of Low-Temperatures, Academy of Sciences Ukrainian SSR, Khar'kov

"Controlling the Generation Kinetics of Coupled Lasers"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 17, No 4, Apr 72, pp 628-634

Abstract: The article suggests a method for obtaining strictly stationary generation of one of the coupled lasers by means of the second (initiating) laser, which is adjusted so that in the absence of coupling it generates under almost stationary conditions with small oscillations (this can be achieved, for example, by introducing a KS-15 negatively modulating filter into the initiating laser cavity). Theoretical calculations indicate that in order to obtain stationary generation throughout the pump pulse it is sufficient for the coupling coefficient to be of the order of 1 percent. There were two series of experiments, with the first studying the dependence of the generation kinetics on the coupling coefficient γ . Two ruby lasers with a system of two positive lenses were used. It was found that at $\gamma = 0$ the radiation of the investigated laser represented the regular damped intensity

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USSR

TIUNOV, YU. A., and CHERNOV, V. S., Ukrainskiy Fizicheskiy Zhurnal, Vol 17,
No 4, Apr 72, pp 628-634

oscillations typical of the free generation of lasers with a lens system. There is an increase in the rate of damping of intensity peaks with an increase in γ . Finally, at $\gamma = 1.1$ percent relaxation occurs practically instantaneously, and the generator operates under purely quasistationary conditions. The second series of experiments studied the dependence of the generation kinetics on the pump power.

The authors thank A. M. RATNER and YU. V. NAEVYKIN for useful discussion of the results.

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- 13 -

1/2 018 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SYNTHESIS AND STUDY OF LONGITUDINAL WAVE ABSORBERS IN RODS AND
PLATES -U-
AUTHOR--(03)--KASHINA, V.I., TIUTEKIN, V.V., SHKVARNIKOV, A.P.
COUNTRY OF INFO--USSR
SOURCE--AKUSTICHESKII ZHURNAL, VOL. 16, APR.-JUNE 1970, P. 257-263
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--MATHEMATIC EXPRESSION, ABSORPTION, METAL ROD, FLAT PLATE,
VIBRATION TRANSMISSION, LONGITUDINAL WAVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605002/D07 STEP NO--UR/0046/70/016/000/0257/0263
CIRC ACCESSION NO--AP0139457
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139457

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE SYNTHESIS OF LONGITUDINAL WAVE ABSORBERS FOR ATTENUATING RESONANCE VIBRATIONS IN RODS AND PLATES. A TEN ELEMENT OPTIMAL ABSORBER FOR A TWO OCTAVE FREQUENCY RANGE IS CALCULATED AS AN EXAMPLE. AN EXPERIMENTAL STUDY IS MADE OF A LONGITUDINAL WAVE ABSORBER WITH AN ABSORPTION COEFFICIENT OF 0.96 TO 0.97 IN A DURALUMIN ROD WITH A THICKNESS OF 5 MM AT FREQUENCIES RANGING FROM 8 TO 32 KHZ. FACILITY: AKADEMIIA NAUK SSSR, AKUSTICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310019-0

UNCLASSIFIED
TITLE--MODIFICATION OF A METHOD FOR DETERMINING NONPROTEIN NITROGEN IN
BLOOD DEVELOPED BY RAPPAPORT AND EICHORN AND INVOLVING THE USE OF A
AUTHOR--TIVEKEYEVA, YA.
COUNTRY OF INFO--USSR
SOURCE--LAB. DELO 1970, (1), 51-2
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD SERUM, NITROGEN, CHEMICAL ANALYSIS, SPECTROPHOTOMETRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0216
CIRC ACCESSION NO--AP0119212
STEP NO--UR/9099/70/000/001/0051/0052
UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310019-0"

2/2 023

CIRC ACCESSION NO--AP0119212
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. IN THE ORIGINAL METHOD OF RAPPAPORT AND EICHORN, N IS LIBERATED WITH AN EXCESS OF HYPOBROMITE AND THE RESIDUAL HYPOBROMITE IS DETD. THE ORIGINAL METHOD USES A LARGE EXCESS OF HYPOBROMITE. ONLY 2 ML OF DEPROTEINIZED SAMPLE (INSTEAD OF 4 ML) AND 2.5 ML (INSTEAD OF 5 ML) OF HYPOBROMITE SOLN. ARE NECESSARY. ERRORS DUE TO HYPOBROMITE EXCESS (UP TO PLUS OR MINUS 30PERCENT OF NONPROTEIN N) ARE THUS ELIMINATED.

UNCLASSIFIED

Acc. Nr.: **AP0029808**

PRIMARY SOURCE: **Vrachebnoye Delo**, 1970, Nr 1, pp 38-40

Ref. Code: UR 0475

**TACHOOSCILOGRAPHIC CHANGES IN PATIENTS WITH ARTERIAL
HYPOTENSION UNDER THE EFFECT OF TURPENTINE BATHS**

O. P. Ljubitova (Kiev)

The efficiency of turpentine baths (white emulsion) has been studied in patients with arterial hypotension as judged by tachooscillographic data. The clinical improvement was accompanied by favourable functional changes of many tachooscillographic indices.

It is concluded that white turpentine baths may be considered a means furthering normalization of the arterial pressure in patients with arterial hypotension.

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REEL/FRAME

19681494

Aerospace Medicine

USSR

TIYAS, A. A.

UDC 613.693

"Exercise Tests With Recording of the Electrocardiogram"

Moscow, Voenno-Meditsinskiy Zhurnal, No 8, 1972, pp 68-71

Abstract: A series of interrelated functional tests was carried out directly in an aviation unit in order to determine the continued fitness of personnel for flight duty. Following a general physical examination, EKG taken at rest, blood and urinalyses, the men perform a Double Master's test with the EKG recorded using 12 leads immediately afterward and 2, 4, 6, and 10 minutes later. If an examination of the EKG reveals no contraindications, the men take the glucose test at basal metabolism, with the EKG again recorded with 12 leads. If the results are satisfactory, the airmen are exposed to hypoxia the next day or day thereafter in a pressure chamber ("altitude" of 5000 m) where the EKG is recorded at minutes 1, 7 to 10, and 30 and after the men leave the chamber. Contraindications for taking the exercise tests are pain in the heart even in the absence of EKG pathology, ambiguous EKG changes, presence of cardiovascular disease, disturbance of fat metabolism or tendency to put on weight quickly, decreased work capacity, unexplained fatigue, and persistent tachycardia. The described tests are useful in detecting latent coronary pathology.

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USSR

UDC: 669.721.042.62

ARUSOO, A. K., KARRO, Kh. Kh., LAUGIS, Yu. Ya., LOOTUS, Ya. K., LOYGOM, V. V.,
SAKKOS, Kh. A., TIYSMUS, Kh. A.

"MHD Drives for Pumping of Liquid Magnesium"

MGD v Metallurgii i Liteyn. Proiz-ve [MHD in Metallurgy and Foundry Production -- Collection of Works], Kiev, 1972, pp 126-130 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G202, by G. Svodtseva).

Translation: The Tallin Polytechnical Institute has developed and introduced to metallurgical production several induction MHD drives for feeding liquid Mg from a continuous refining furnace to a casting conveyor. The basic technical data are presented on the MHD drives and a schematic diagram of the power portions is presented. The drives operate under manual control. During tapping, the static head and hydraulic resistance are increased. This means that conservation of constant productivity requires that the supply voltage be increased by 1.2-1.8 times. The channel of the pump is replaced every three to five days. A diagram of the activity of the MHD drive under manual control is presented.

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USSR

TIYT, E. A.

"One Modification of a Correlation Graph"

Tr. Vychisl. Tsentra. Tartus. Un-t [Works of Computer Center of Tartu University], 1972, No 26, pp 19-34 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V237, by S. Ayvazyan).

Translation: A certain modification is presented for the so-called method of correlation pleiads, allowing a fixed set of numerical characteristics to be divided into groups, within which the characteristics are rather highly mutually correlated. The author believes that his modification allows certain shortcomings of the method to be avoided. It is suggested that the method be used in combination with other methods of reduction of dimensionality, in particular as a preliminary stage in application of a model of factor analysis.

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USSR

TIYT, E. A.

"Set of Statistical Methods of Classification (pattern recognition)"

Tr. Vychisl. Tsentra. Tartus. Un-t. [Works of Computer Center of Tartu University], 1972, No 25, pp 3-38 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V701 by V. Mikheyev).

Translation: A set of statistical methods of classification (grouping, cluster analysis, taxonomy), i.e., stochastic methods of pattern recognition without a teacher, is studied. No assumptions are made and no limitations are placed on the discriminating functions. In some particular cases, it is assumed that the discriminating functions are linear, piecewise-linear or parabolic. It is noted that the methods studied allow a priori information on the type of distribution of the initial random quantities to be used, but also operate without this a priori information. The initial characteristics may be quantitative, ordinal or qualitative. The number of groups may be precisely or approximately fixed, but the number of groups may also be selected to the most suitable for a given material in some sense. The iterative process studied is a certain variation (generalization) of "Forel"-type methods with variable parameters and forms of groups ("taxons"), for which statistical determina-

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TIYT, E. A., Tr. Vichisl. Tsentra. Tartus. Un-t., 1972, No 25, pp 3-38.

tion of the number of items in the group is also possible in refining the groups. Using the methods studied, a number of adjacent problems can also be solved: comparison of two (or more) different groups for purposes of selection of the best groups; comparison of two groups from the standpoint of their coincidence (whether both methods describe the same groups or not); determination of typical group elements; combination of new elements in available groups; grouping of elements for which not all characteristics are known; selection of an informative subspace in the space of characteristics; addition of new material to already available groups.

2/2

- 45 -

IZUL, A. YA.

50RS56499
14 JULY 72

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During the experiment we detected definite changes in functioning of the nervous system, manifested in a lability of autonomic reflexes, frequently exceeding the limits of

adapt, applicable to an evaluation of the capacity of the body to ability of body functions to prolonged space flights, a study was made of the nervous, cardiovascular, endocrine, immune- biologic and other systems during a 60-day experiment, in which six subjects in the ego group 28-35 years participated. The experiment involved five stages: 11 days -- collecting background data; two days -- restructuring of the rhythm with four-hour cycles of work, rest and sleep; five days -- restructuring period of the aftereffect (dynamics of reactivation); seven days -- study of the aftereffect (dynamics of reactivation); eleven days -- restructuring of the rhythm of three subjects (first Group) during the first two days of hypokinesia and another three subjects (second Group) during the last two days of hypokinesia.

In order to evaluate the functional and adaptive capabilities of the body it is now customary to use different load examinations and tests in approximate form simulating various kinds of spaceflight (hypokinesia, isolation, hypoxia, acceleration, change in diurnal rhythm, etc.) Study of the influence of these factors on the dynamics of body adaptation is most frequently accomplished with but exposure to a single factor.

Article by Ye. I. Sokolov, A. Ya. Izul, Yu. S. Melnikova and V. P. Khmel'kov, Moscow, Meditsina i Meditsinskaya Meditsina, 1971, pp 326-327. (Current Problems in Space Biology and Medicine)

MEDICINE

50:JPRS 55100

4 FEB 79

UDC 612.524

THERMOTOGRAPHY OF THE SKIN IN HEALTHY HUMAN SUBJECTS UNDER COMFORTABLE CONDITIONS

Article by A. Ya. Tsimb, Moscow, Kozmicheskaya Biologiya i Meditsina, Russian, Vol. 3, No. 1, 1978, submitted for publication 17 September 1971, pp 69-72/

Abstract: Over a 12-month period the temperature of the human skin (thermography) was measured at ten symmetric points (forehead, cheek, neck, chest, shoulder, back of hand, stomach, thigh, shin, back of the foot), 150 healthy male subjects in the age group 24-35 under comfortable conditions. In order to determine possible seasonal variations the test subjects were divided into two groups: in the first (55 persons) temperature measurements were made during the warm season (April to September) and in the second group (95 persons) during the cool season (October to March). The statistical variations method was used in determining the mean values or "normal" skin temperature (thermography) for every point. The results indicate that the most comfortable areas of the human body surface ("envelope") were those of the neck, chest, stomach and proximal regions of the limbs and cheeks. The latter areas exhibited distinct seasonal variations with respect to temperature. The determined mean ("normal") skin thermography parameters can be used together with clinical data in studying autonomic-vascular regulation and thermal regulation during body exposure to various stress factors.

One of the principal conditions for normal vital functioning in man and higher animals is a constancy of body temperature (homothermia), ensured by the functioning of special heat-regulating mechanisms.

According to data from a number of authors (I. S. Vaynsberg; I. I. Rusetskii; I. Ya. Shargorodskii; Ye. P. Davidenko-Kul'kovai; Ye. F. Drigo

USSR

UDC 681.325.65

LASTOCHKIN, N. K., GRACHEVA, I. I., TKACH, I. I.

"Some Problems in Automating Experimental Investigations of the Parameters of Analog-Digital and Digital-Analog Converters"

Novosibirsk, Konf. po avtomatiz. nauch. issled. na osnove primeneniya EVM, 1972--sbornik (Conference on Automating Computer-Based Scientific Research, 1972--collection of works), 1972, pp 97-101 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 72, abstract No 11B302)

Translation: It is noted that most parameters of converters are functions of random quantities, and therefore their determination requires statistical methods which can be completely realized only when fully automated systems are used. The particulars and principles of organization of automated systems for measuring parameters are considered. Bibliography of five titles. L. P.

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1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--REFRACTORY MIXTURE FOR LINING THE IRON TROUGHS OF BLAST FURNACES
-U-
AUTHOR--(05)-PRYADKO, V.M., KOTOV, K.I., MAGALA, V.S., ZHAK, A.M., TKACH,
I.T.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,135
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, REFRACTORY MATERIAL, METALLURGIC PATENT,
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CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AA0130095

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U10
CIRC ACCESSION NO--AA0130095 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REFRACTORY MIXT. CONTG. A FILLER
AND BINDER HAS THE FOLLOWING COMPN. (IN KG-M PRIME3): CRUSHED HIGH
ALUMINA BRICK (PARTICLE SIZE FRACTION 0.15-5 MM) 500-600, CRUSHED HIGH
ALUMINA BRICK (PARTICLE SIZE 5-10 MM) 900-1000, CRUSHED ALUMINA BRICK
(PARTICLE SIZE SMALLER THAN 0.09 MM) 400-500, FE FREE ZR (ACCORDING TO
GOST TSMTU 4469 54) 200-50, AND 80PERCENT PHOSPHORIC ACID 180-200 L.-M
PRIME3. FACILITY: DNEPROPETROVSK CONSTRUCTION ENGINEERING
INSTITUTE AND PETROVSKII, G. I. METALLURGICAL PLANT, DNEPROPETROVSK.

PROCESSING DATE--27NOV70

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310019-0

UNCLASSIFIED
USE OF ONE MESON APPROXIMATION TO DETERMINE PI PI INTERACTION CROSS
SECTIONS -U-
AUTHOR-(04)-MAKAROV, M.M., NELYUBIN, V.V., SARANTSEV, V.V., TKACH, L.N.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(2), 461-7
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PION PION INTERACTION, APPROXIMATION CALCULATION, PION PROTON
INTERACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1991/1038
CIRC ACCESSION NO--AP0110728
STEP NO--UR/0367/70/011/002/0461/0467
UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203310019-0"

ACCESSION NO--AP0110728
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--16OCT70

NEGATIVE INTERACTION CROSS SECTIONS ARE DETD. BY ANAL. OF EXPTL. DATA ON
THE REACTION PI PRIME NEGATIVE P YIELDS PI PRIME POSITIVE PI PRIME
NEGATIVE N IN THE ENERGY RANGE 360-780 MEV.
TEKH. INST. IN. IOFFE, LENINGRAD, USSR.

FACILITY: FIZ.

UNCLASSIFIED

UNCLASSIFIED
TITLE--GAMMA RAYS FROM THE INELASTIC INTERACTIONS OF 14 MEV NEUTRONS WITH
NITROGEN, OXYGEN, ALUMINUM, AND IRON -U-
AUTHOR-(02)-SUKHANOV, B.I., TKACH, N.P.
PROCESSING DATE--09OCT70

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(1), 33-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON BOMBARDMENT, INELASTIC SCATTERING, EXCITATION CROSS
SECTION, PHOTO EMISSION, GAMMA SPECTROMETER, COMPTON EFFECT,
SEMICONDUCTOR DETECTOR, NITROGEN, OXYGEN, IRON, ALUMINUM, GAMMA SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0173

CIRC ACCESSION NO--AP0048465

STEP NO--UR/0367/70/011/001/0033/0035

UNCLASSIFIED

038
CIRC ACCESSION NO--AP0048465 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE YIELD CROSS SECTION OF GAMMA
QUANTA RESULTING FROM INELASTIC INTERACTION OF 14-MEV N WITH N, O, AL,
OR FE NUCLEI ARE GIVEN. THE MEASUREMENTS WERE MADE IN THE ENERGY REGION
E EQUALS 0.7-4.5 MEV BY MEANS OF THE 2 CRYSTAL COMPTON SPECTROMETER WITH
60 TIMES 60 MM STILBENE CRYSTALS. THE N BACKGROUND WAS REDUCED BY THE
METHOD OF THE DIFFERENCE OF THE FLUORESCENCE LIFETIME. THE COINCIDENCE
RESOLVING TIME APPROXIMATELY EQUAL TO 10 PRIME NEGATIVE 8 SEC. THE GAMMA
RAYS SPECTRA ARE PRESENTED. THE PEAK TO VALLEY RATIO WAS BETTER THAN BY
USING THE 1 CRYSTAL NAI(TL) SPECTROMETER.

PROCESSING DATE--09OCT70

UNCLASSIFIED

89

KACH, S.I.

(C01)

M.I.

COMBAT ACTION OF A MOTORIZED RIFLE BATTALION IN A CITY

UDC: 353.426

(Excerpt from book by MA) Gen A. E. Shokolovitch, Col F. I. Kozlov, and Col

MAI, MASH: Boevyye Deyatel'nyye Motostrelkovyye Batali'ony v Goroda; Moscow, Military Press, Russian, 1971, signed to press 30 March 1971, 192 pp.

Title Page

Boevyye Deyatel'nyye Motostrelkovyye Batali'ony v Goroda (Combat Action of a

MotORIZED Rifle Battalion in a City).

Signed to Press: 30 March 1971. Number of copies: 8000.

Brief Description

Distinguishing aspects of organization for and conduct of offensive and defensive combat waged by subunits (podrazdeleniya) in a city when other nuclear weapons (podrazdeleniya) are employed are described in this book. Concrete tactical examples are described in this book, and in organizing for offensive and defensive combat in a city.

Theoretical questions as well as the practical work of a commander and his staff are described based on the experience gained in the Great Patriotic War and postwar troop exercises. The views held in foreign armies as described in the book are based on materials published in the open foreign press. The book is intended for use by officers in motorized rifle units as an aid in preparing for instruction.

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Introduction

Classification of action and influence of these elements

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8 Mar 72

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3. Place and role of motorized rifle battalions in a city	13
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5. Work of commander and staff of a battalion in organizing for an attack	21
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1. Views on the organization and conduct of an attack in a city	31
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6. Control of subunits in a battalion in organizing for a defense of a city	76

The history of wars and especially battle wars is known to all. This will be characteristic of any future war if the modern cities are administrative and political centers. They contain large masonry buildings and structures and numerous

USSR

UDC: 681.3.06:51

KUDRYASHOVA, O. N., SARKISYAN, N. A., ~~TKACH, V. F.~~

"Organization of an Input-Output System With Inquiry and Response Stations and a VNIIE-3 Computer for Real-Time Collection of Production Data"

V sb. Primeneniye vychisl. tekhn. v elektrotekhn. prom-sti (Use of Computer Technology in the Electrical Engineering Industry--collection of works), Moscow, 1971, pp 289-294 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V844)

Translation: The authors discuss an input-output system with inquiry-response stations. The system is a software element in a system for collection of production data in a slab mill. The described system organizes bilateral communications between the VNIIE-3 control computer and telegraph equipment installed in the production line, and implements series-parallel reception of messages and output of information in the VNIIE-3 computer system in amounts up to eight pieces, as well as quasisimultaneous operation of the computer and an external device. V. Mikheyev.

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USSR

UDC 681.3.06:51

GLUKHOVA, V. M., SUKHORUKOV, L. N., TKACH, V. F.

"The 'VNIEM-3' Autocoder and Its Use in Preparation of Computer Control Programs"

Primeneniye Vychisl. Tekhn. v Elektrotekhn. Prom-sti [Use of Computer Equipment in the Electronics Industry -- Collection of Works], Moscow, 1971, pp 262-272, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V792 by V. Mikheyev).

Translation: The specifics of the VNIEM-3 autocoder are described, allowing the peculiarities and optimality of programming in the language of the system of instructions to be retained while facilitating interfacing of independently composed program sections. An illustrative example is presented in the appendix.

USSR

UDC 628.165.04:628.31

TKACH, V. I., FILIPPOV, S. N., and SOROKIN, V. S.

"Distillation Desalination Units for Purification of Sewage From Some Industries"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 7, 1973, pp 17-21

Abstract: The problems involved in purification of sewage with high salt content are discussed including the aspects of their dumping into the general water works, recycling, etc. Purification units have been designed based on evaporation of sewage. Technical diagrams for the apparatus used in thermal purification are reported. None of them are in use as yet. Some are being built at present time, some are still on the drawing boards.

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